REMARKS

Reconsideration of the above identified application in view of the preceding amendments and following remarks is respectfully requested.

Claims 1-43 are pending in this application. By this Amendment, Applicants amended Claims 1, 5, 7, 8, 15, 20, 25, 30 and 40. The claim amendments were made to more precisely define the invention in accordance with 35 U.S.C. § 112, paragraph 2. These amendments have not been necessitated by the need to distinguish the present invention from any prior art. It is respectfully submitted that no new matter has been introduced by these amendments, as support therefor is found throughout the specification and drawings.

In the Office Action, Claims 1 and 5 were rejected under 35 U.S.C. § 112, second paragraphs, as being indefinite due to minor informalities. Claims 1 and 5 have been amended to correct these informalities. In view of these clarifying amendments, withdrawal of the rejection is respectfully requested.

In the Office Action, the Examiner rejected Claim 1-5 and 8-43 under the judicially created doctrine of double patenting. Applicant's representative respectfully requests that the rejection be held in abeyance as a suitable a terminal disclaimer can be filed upon receipt of a Notice of Allowance.

In the Office Action, Claims 1-4 were rejected under 35 U.S.C. § 103 (a) over U.S. Patent No. 5,826,081 to Zolnowsky in view of Hanrahan (Google groups).

Zolnowsky shows a thread dispatcher for a multiprocessor system (MP). For example, referring to Figure 4, each processor 1, 2, ... N has a separate, respective dispatch queue 401, 402, 403. Each dispatch queue has its own scheduling lock so that any processor

attempting to dispatch a thread from a queue needs to acquire a lock for that queue before taking the thread off the queue. Zolnowsky viewed this as an improvement over the prior art where previously a single schedule lock was used to lock the entire single dispatch queue associated with all processors (see col. 6, lines 28-42). Zolnowsky also discloses a dispatcher model that maintains a separate global dispatch queue for unbound higher priority real time threads (see col. 5, lines 46-48).

Hanrahan describes the prior art system described in Zolnowsky wherein a single scheduler is used in an MP. The single scheduler database of Hanrahan can be locked to cause exactly the lock contention that Zolnowsky tries to avoid.

It is respectfully submitted that even if the references of Zolnowsky and Hanrahan were combined as suggested by the Examiner, the claimed invention would not be obtained. With regard to Claim 1, there is nothing in either Zolnowsky and Hanrahan which discloses or suggests, alone or in part, in whole or in combination, a parallel dispatching and wait signaling method for protecting data items of a dispatcher database of an operating system including the steps of, *inter alia*, creating N local locks, each N local lock for a subset of the dispatcher database, where N > 2, wherein the subsets are formed based upon a natural usage pattern of temporal locality and spatial locality. Thus, an effective decrease in run time for a process or applications program occurs because the frequency of intra-group event signaling and dispatching typically occurs with much greater frequency than in the case of inter-group signaling and dispatching, limiting access of the data items of the given subset to the one of dispatching or wait signaling operation to be performed for that given subset; and concurrently maintaining access to data items of unlocked subsets of the dispatcher database so that the operating system maintains an

operational state. Therefore, Claim 1 and each of the claims depending therefrom are not

rendered obvious by the combination of references cited by the Examiner, and withdrawal

of the rejection under 35 U.S.C. §103 (a) is respectfully requested.

In the Office Action, Claims 5-43 were rejected under 35 U.S.C. § 103 (a)

over Zolnowsky in view of Hanrahan, and further in view of U.S. Patent No. 6,502,103 to Frey

et al. and U.S. Patent No. 5,721,943 to Johnson.

As noted above, Zolnowsky shows a plurality of local dispatch queues for an

MP. Zolnowsky also proposes a separate global dispatch queue for higher priority

threads in addition to each processor's own dispatch queues. In an effort to make correct

decisions, Zolnowsky shows a select and verify scheme.

Hanrahan describes a lockable single scheduler used in an MP.

Frey et al. show a method for providing data objects to support multiple

resources. Each managed object lives in a home, which is defined by a name and has a defined

set of properties. The objects are retrievable. Upon retrieval, the objects can be updated.

Johnson discloses negotiable locks for concurrent access of control data. The

users are permitted to negotiate the two locks when a conflict occurs. For the purpose of

determining conflicts between lock requests, each type of lock is categorized and depending

upon the categorizations, the lock conflicts are resolved.

It is respectfully submitted that there is nothing in the cited combination

which discloses or suggests, alone or in part, in whole or in combination, the methods as

recited in the pending claims.

In particular, Claims 1, 15, 30 and 40 substantially recite, *inter alia*,

defining one or more dispatch groups, each dispatch group including dispatchable objects,

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made up of any of threads, resources or events that are temporally and spatially related. Thus, a single dispatcher database has defined related subsets or groups, each group being capable of being efficiently locked while others are not. Therefore, Claims 1, 15, 30 and 40, and each of the claims depending therefrom, are not rendered obvious by the combination of references cited by the Examiner, and withdrawal of the rejection under 35 U.S.C. §103 (a) is respectfully requested.

Turning to Claim 5, there is nothing in the cited combination which discloses or suggests, alone or in part, in whole or in combination, the limitations as recited in Claims 5, 8 and 20. In particular, Claim 5 recites, *inter alia*, evaluating the operating system after modifying the locking requirements so as to determine if the overall performance of the operating system is acceptable, and when unacceptable, remodifying the heaviest path. Thus, the performance of the operating system is improved efficiently by remodifying the highest usage path. Therefore, Claim 5 and each of the claims depending therefrom are not rendered obvious by the combination of references cited by the Examiner, and withdrawal of the rejection under 35 U.S.C. §103 (a) is respectfully requested.

Turning to Claim 7, there is nothing in the cited combination which discloses or suggests, alone or in part, in whole or in combination, the limitations as recited in Claim 7. In particular, Claim 7 recites, *inter alia*, defining a plurality of dispatch groups, each dispatch group being made up of any of threads, resources and events that frequently interact with each other. Thus, the overall run time is reduced because of the frequent interaction between the dispatch groups. Therefore, Claim 7 and each of the claims depending therefrom are not rendered obvious by the combination of references cited by

the Examiner, and withdrawal of the rejection under 35 U.S.C. §103 (a) is respectfully requested.

Turning to Claim 8, there is nothing in the cited combination which discloses or suggests, alone or in part, in whole or in combination, the limitations as recited in Claim 8. In particular, Claim 8 recites, *inter alia*, forming dispatch groups based upon a natural usage pattern. Thus, the overall run time is reduced because of the natural usage pattern among the dispatch groups. Therefore, Claim 8 and each of the claims depending therefrom are not rendered obvious by the combination of references cited by the Examiner, and withdrawal of the rejection under 35 U.S.C. §103 (a) is respectfully requested.

Turning to Claim 20, there is nothing in the cited combination which discloses or suggests, alone or in part, in whole or in combination, the limitations as recited in Claim 20. In particular, Claim 20 recites, *inter alia*, forming dispatch groups from a spatial locality. Thus, the overall run time is reduced because of the spatial relationship between the objects of the group. Therefore, Claim 20 and each of the claims depending therefrom are not rendered obvious by the combination of references cited by the Examiner, and withdrawal of the rejection under 35 U.S.C. §103 (a) is respectfully requested.

Turning to Claim 25, there is nothing in the cited combination which discloses or suggests, alone or in part, in whole or in combination, the limitations as recited in Claim ?. In particular, Claim 25 recites, *inter alia*, defining dispatch groups made up of objects that are in a temporal locality. Thus, the overall run time is reduced because of the temporal locality of the objects of the dispatch groups. Therefore, Claim 25 and each

of the claims depending therefrom are not rendered obvious by the combination of references cited by the Examiner, and withdrawal of the rejection under 35 U.S.C. §103 (a) is respectfully requested.

Any additional fees or overpayments due as a result of filing the present paper may be applied to Deposit Account No. 04-1105. It is respectfully submitted that all of the claims now remaining in this application, namely Claims 1-43, are in condition for allowance, and such action is earnestly solicited.

If after reviewing this amendment, the Examiner believes that a telephone interview would facilitate the resolution of any remaining matters the undersigned attorney may be contacted at the number set forth herein below.

Respectfully submitted,

Date: *August 16, 2005*

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